

during that time attained the same general and alarming violence, still continued to recur at longer or shorter intervals.

Finding that nothing had been, or seemed likely to be, effected by the stimulants alone, and dreading the state of exhaustion and collapse which such powerful and long-continued excitement must superinduce, I resolved to endeavour to break up the chain of morbid action, by making a new constitutional impression. Accordingly, on the fifth day from the first attack of the disease, I commenced giving him calomel, in conjunction with the remedies previously used, and continued it until a complete ptyalism was produced. This was not at first attended with any very manifest amendment of the symptoms, but in a few days, though the spasms continued to excite uneasiness and alarm, they were much reduced in violence, and were, for the most part, confined to the injured extremity. The patient continued in this situation for several days, when I commenced giving him assafoetida in substance, and in large quantities, which was promptly and unequivocally beneficial, for in four days from its first exhibition the disease was entirely removed.

Although I believe the most active and vigorous use of stimulants to have been entirely indispensable, as auxiliaries in the treatment of this case, yet I am persuaded that the breaking up of the morbid condition is clearly attributable to the agency of the mercury. The prompt and effectual influence of the assafoetida, in the latter stages of this case, leads me to entertain a high opinion of its antispasmodic virtues when administered in very large doses.

*Montgomery County, Pa. Sept. 1831.*

ART. IX. *Observations on the Modus Medendi of Emetics.* By ROBERT J. TURNBULL, M. D. of Charleston, S. C.

WE do not seriously indulge the hope, that there is much on the subject of emetics possessing the charm of novelty which has hitherto escaped the research of the profession. The extent of our present design, is rather to revive certain principles connected with the operation of emetics upon the human system, which, though acknowledged by all as among the most fundamental of the healing art, are too often lost sight of by the regular routine practitioner—together with certain deviations from the ordinary mode of reasoning on this class of medicines, which, if possessed of no other merit, will at least be entitled to the claim of originality.

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We cannot, however, but flatter ourselves, that a more extended view of the phenomena which evince themselves upon the exhibition of emetic substances, will conduce much to arrest the progress of discases of associated action, which ought, and can only be counteracted by agents of equally associated effects upon the system. Fever, a disease universal in its operation upon the system, implicating every organ, every tissue, and every system of vessels, is only to be subdued by remedial agents equally universal in their effects; and in searching the *materia medica* for a class of medicines capable of accomplishing these indications, none presents such claims to our consideration as the various emetic substances, distributed through the vegetable and animal kingdoms. In combating fevers successfully, the practitioner must pass over the less important and *primary* action of emetics, to wit, the ejection of the vitiated contents of the stomach, and base all his hopes of success upon those *secondary* effects upon the system, brought about by the depressed condition of the heart and arteries, dependant upon that inexplicable bond of union between distant parts of the system, denominated *sympathy*, and by which depressed condition of the circulatory organs we effectually controul inordinate action in any and every part, whether manifested in the form of simple excitement, or intense inflammatory action.

However, to one conversant with the high encomiums passed upon this class of medicines by the various authorities of the *materia medica*, it cannot but be evident that the practice of the present day is not based upon those salutary principles, viz. the *secondary action* of emetics, which characterized the practice of the practitioners of the past generation—that a revolution has obtained in the therapeutics of disease which has substituted a mode of treatment widely differing from that of our predecessors—and that the secondary effects of emetics have not only been lost sight of, but that the class of cathartic medicines have in a great measure superseded the use of emetics. It is not, however, a little singular, that the practice and theory of the day should be at variance. While our text-books teem with recitals of the wholesome and salutary effects of emetics, acknowledge their varied and extensive operation on the system, justly commend them as primary agents in combating the numerous diseases “that flesh is heir to;” still, by a strange inconsistency, they are much neglected, not unfrequently condemned on account of some hypothetical consideration, and when prescribed, it is usually with views so limited, as in a great measure to render them, if not nugatory, certainly of extremely limited advantage.

Though the writers of the *materia medica* have ably portrayed the *primary* and *secondary effects* of emetic substances when acting upon the human system, he who has concentrated his observation upon the practice of the profession relative to the employment of emetics, will readily perceive the necessity of conceding, that they have in a great number of diseases been rejected as dangerous, and even when acknowledged as legitimate resources of the art, have, in a majority of cases, been resorted to with the most limited views, simply prescribed as an evacuant of a stomach morbidly oppressed with accumulated ingesta or vitiated secretions, at once losing sight of those various *secondary phenomena* which invariably supervene upon the introduction of emetic substances into the stomach. Such is the extent of sympathy which exists between this organ and all other parts of the animal machine, that this viscus has, with no less propriety than beauty of expression, been termed the *centre of sympathies*. To attempt fully to trace the causes of this bond of union between the remotest parts of the system, might be involving ourselves in a labyrinth of *cause* and *effect* too intricate to engage the attention at present; suffice it, that we now only advance a theory, which, though deemed inadequate to explain this singular and extensive connexion of the various remote parts of the system, may be a mean of leading other minds to a more thorough investigation of a fact thus far deeply involved in obscurity.

In treating this subject we shall divide the numerous sympathies which manifest themselves, into *direct*, and *indirect*. *Direct sympathy* is that which exists between the *heart* and *stomach*, and we shall denominate it the *gastro-cardiac sympathy*.

To give any plausible conjecture of this connexion between these two important organs—the centres of the circulatory and digestive systems, it will be necessary to resort to another fact, which, though somewhat hypothetical, nevertheless carries with it so much probability, that we think it will be conceded by all.

We would maintain, that every organ, for the performance of its healthy functions, is dependent upon the *brain* for a certain portion of nervous fluid, *vis nervæ*, by virtue of which it performs its ordinary functions.

It is well known, that inordinate muscular action, to accomplish which the muscles must be constantly supplied with nervous energy, greatly impedes the digestive process. Great mental exertion, by withholding that *vis nervæ*, which is essential to the various organs for the performance of their respective functions,

and concentrating it for purposes of great mental action, necessarily impairs these organs, thus robbed of their due proportion of this essential fluid. Great mental emotion, such as grief, fear, joy, all exert an injurious tendency upon the other organs of the system, by concentrating this fluid in the brain. To this abstraction of the *vis nervea* by the cerebral mass from the other viscera, may be referred the whole catalogue of diseases incident to persons of sedentary habits. The stomach, and in short, the whole digestive apparatus being thus extraordinarily robbed of its *primum mobile*, viz. the *vis nervea*, is still called upon to perform its ordinary avocations in the ordinary manner; that it should not promptly respond to this unreasonable demand, is not singular; that it should consequently perform its functions in an irregular manner, first, by functional derangement of the *primæ viæ*, as evinced by acidity, flatulence, cardialgia, &c. and after by chronic, gastric and hepatic inflammation, is the natural consequence of the abstraction of this fluid; thus clearly proving that the health of the individual ultimately depends upon a regular and just distribution of nervous energy to the various organs of the body.

Now, by a resort to the old and just maxim of "*ubi irritatio, ibi flosus*," may we at once give some plausible conjecture as to the various phenomena which are manifested in the circulatory system, when an emetic substance is presented to the stomach. By an acknowledged law of the animal economy, every organ is endowed with the power of instituting certain processes, tending to avert any causes which threaten the interruption of the performance of its functions. The sensitive fibres of the iris immediately contracts to protect the delicate retina from an intense light, which by over-stimulation would produce organic derangement in this delicate tissue. The intestines, by virtue of the same sanative principle inherent in them, by an increased peristaltic action hurry along the tract of the alimentary canal any substance incompatible with its ordinary and healthy action, and thus it is that the stomach when oppressed by the presence of an emetic substance, would appear, when about to collect its energies, to call upon the neighbouring organs to lend their aid for the ejection of the offending matters. By the immediate response of the various organs, there is concentrated in this viscus an unusual degree of nervous power, to the abstraction of it from every other part of the system. The heart, thus deprived of its ordinary quantity of nervous energy, and feeling the want of that portion which has been determined to the emetic oppressed stomach, necessarily performs its functions in an enfeebled manner, and a corresponding en-

feeble systole and diastole is the result, as evinced by the paleness of the countenance, indicative of diminished action in the capillary vessels of the face, and as rendered more evident by an examination of the circulatory system, through the medium of a soft, feeble, or frequent pulse, &c. which facts we think unequivocally establish the existence of that *direct* sympathy between the stomach and heart, which we above termed the *gastro-cardiac sympathy*. And it is by the intervention of this *one direct sympathy*, that we account for all those phenomena which are presented to our observation under the term sympathies; numerous indeed, by virtue of that unlimited connexion which exists between the heart and every part of the animal machine. As there is no organ whose inmost recesses are not momentarily subjected to the vivifying influence of the contents of the heart and arteries, it will be apparent to the most casual observer, that in the exact ratio that we can controul the action of these, we shall produce corresponding changes in every portion of the system; and thus do we illustrate those various phenomena which have obtained the various appellations of gastro-cutaneous, gastro-cerebral, gastro-hepatic, and gastro-pulmonic sympathies, as also innumerable others, which might be multiplied *ad infinitum*—certainly to as many as there are parts in the animal machine. They might justly be enumerated from the most important organs to the *ultimate fibre* which enters into the most delicate structure. To enumerate the most conspicuous of these, will, we feel assured, be productive of giving liberal and salutary views in the exhibition of emetics, which cannot fail to render our practice more successful, and, at the same time, confirm the confidence which our *text books* repose in this valuable class of medicines.

In pursuing our inquiries relative to *indirect sympathy*, the first that presents itself to our consideration is that which exists between the stomach and brain, under the title of the gastro-cerebral sympathy. This connexion between these important organs is made apparent to our senses by the syneope which supervenes upon extreme nausea, dependant upon an enfeebled, or perhaps a *suspension* of the capillary circulation within the cerebral mass, and this again dependant and enfeebled action of the heart, enfeebled by an undue determination of nervous fluid to the emetic oppressed stomach. It ought here to be remarked that these sympathies are reciprocal, the stomach being as often affected by impressions made upon the brain and the nerves derived from thence; the infliction of a blow upon the cranium, certain impressions made upon the olfactory nerves by dis-

agreeable odours, the abstraction of blood, all exert an influence upon the stomach.

Ever to have an attentive eye to this sympathetic connexion cannot but conduce highly to our success, when called to encounter inflammation in this important organ, whether proceeding from disorganization of its substance or its delicate meninges, or whether the result of simple excitement dependant upon increased vascular action. To controul inordinate action in this important organ, the earliest resort should be made to the use of emetics, after a copious evacuation of the circulatory system by the lancet, thus maintaining the advantage derived from the use of this instrument without further debilitating the patient by copious and repeated draughts upon the vital fluid.

Of the existence of many other sympathies between the stomach and other organs, there exists most ample testimony. These have received appellations indicative of the various organs which they connect, as for instance, the *gastro-renal*, the *utero-gastric*, the *cysto-gastric*, &c. all evincing themselves under certain circumstances, such as the irritation dependant upon urinary calculi in the bladder or ureters, the uterine contents during the period of gestation, the accumulation of urine in the bladder, all of which exert an influence over the stomach, inducing all the symptoms of gastric irritation, varying from the slightest nausea to the fullest vomiting.

After having thus pointed out the *universal sympathy* which exists between the stomach and every other part of the system, may we not ask what organ is diseased, in which symptoms of *preternatural action* are manifested, and emetics not imperiously demanded? If, as pathologists teach, *inflammation is seated in the capillary system of vessels*, then are emetics, by virtue of their peculiar sedative action upon these vessels, controlling both the velocity and quantity of the circulating mass within them, one of our most powerful antiphlogistic agents. The heart no sooner perceives that a portion of its ordinary nervous energy has been abstracted, than enfeebled systole supervenes. An enfeebled contraction of this organ necessarily involves the supposition of diminished action of the whole arterial system; those recesses which are most remote from the centre of the circulation first feel the absence of its ordinary stimulus, and diminished action in these parts, before preternaturally excited, is the consequence.

That such diminished action of the *capillary system* of the *internal* organs does take place, we infer from the phenomena presented to us by those which are *external*. The pale and shrivelled countenance,

dependant upon diminished action of the capillary vessels of the face, occurring synchronously, and even before the supervention of nausea, forcibly teaches us that an analogous condition must obtain throughout the system, in the internal as well as the external organs.

Of the sedative effects of emetics upon the capillary system, there exists other testimony than our own observations. Experimentalists have ascertained, that in the exact ratio of the emetic substance being urged upon the stomach, is the degree of the diminished action extended; retrograding from the capillary system to the next sized set of vessels, and again to those of a still larger diameter, until eventually in the smaller animals it has extended itself by this retrograde movement to the heart itself, whose action it has eventually extinguished.

Thus deprived of the vivifying influence of the blood and with it a certain portion of the *vis nervea*, which gives to the diseased organ a morbidly tonic condition, a universal relaxation pervades the system, eliciting the organs thus affected to pour out their locked up secretions.

Such then are the additional views, which ought to occupy the mind of the physician when prescribing emetic substances. In all diseases of associated action, it is to their effects upon those organs embraced in the term *secundæ viæ*, that we must look for success. In the *idiopathic pyrexia*, by virtue of their universal relaxant property, they become one of our chief agents in arresting the progress of this class of diseases. In fever, dependant upon inflammation, or some other irregularity of the capillary system of vessels, which may be said to constitute the parenchyma of an organ; the exhibition of an emetic stands second only to the use of the lancet. As there cannot exist great local determination, without a corresponding accumulation of nervous energy in a part, the beneficial effect of an emetic will be strikingly observable in the fact, that having diminished the quantity of vital fluid circulating within the part, an abstraction of a portion of the morbidly accumulated *vis nervea* is the result, and relief from local pain is a further consequence.

When thus dwelling upon the *secondary action* of emetics, we would not wish to have it understood that we in any degree wish to invalidate the confidence which is justly reposed in this valuable class of medicines, even when prescribed with a view to their *primary action* upon the system, viz. for the ejection of accumulated ingestion or vitiated secretions, preparatory to the exhibition of other medicines, designed to operate upon the alimentary canal. Such preparation being sometimes absolutely necessary, owing to a preternatural irri-

tability of the stomach. The advantages of relieving a stomach thus oppressed, are too evident to require comment here. None feel the advantages to be derived from the *primary action* of emetics upon the alimentary canal and collatitious viscera, more than ourselves.

As cathartic agents, this class of medicines present urgent claims upon the attention of the profession. They exert a twofold operation upon the system. Independent of their stimulant operation upon the alimentary tube, producing copious discharges of feculent matter, highly coloured with the hepatic secretion, first *elicited* by the universal relaxation of the system, and after *extorted* from the liver by the combined pressure of the diaphragm and abdominal muscles, during the act of vomiting. A portion of this bile, escaping into the duodenum, and thus being out of the reach of the inverted action of the stomach, passes through the whole tract of the alimentary canal producing its peculiar cathartic action. Independent of this highly remedial operation upon the alimentary canal and collatitious viscera, antimonials managed as cathartics, presents other and higher claims to the consideration of the profession, which ought to give them a decided preference when prescribed in febrile diseases. We again allude to their *secondary operation* upon the system, to wit, their *control of the action of the heart and arteries*; this while it effects the primary object of alvine evacuation, subdues inordinate action in every part; whether it be in the encephalon, as evinced by head-ache, intolerance of light, or in the suffused and muddy appearance of the eyes; whether in the pulmonary organs, as declared by cough, stricture, or limited respiration; whether the inflammation be seated in the parenchyma of the liver or in the serous tissues investing it; in short, by virtue of diminished cardiac, arterial, and consequent venous action, in whatever part of the system, however remote, or inordinate it may exist, it cannot fail immediately to experience the sedative effects of antimonial emetics, administered with the double view of producing their emetic and cathartic operation.

We shall now cursorily glance at one or two diseases, in which emetics may be administered with great advantage, but more especially with a view to their *modus medendi* in these complaints.

If, as we believe, dropsy be dependant more frequently upon *inordinate capillary action*, resulting in the deposit of serous secretion, rather than upon diminished action of the absorbent system of vessels, then would our views of controlling the circulation within these vessels, through the medium of the gastro-cardiac sympathy, prove most applicable. The exhibition of emetics in this disease, will, however, much depend upon the condition of the pulse. As desirous as we



are for a more general use of antimonials, upon more extensive views, we cannot subscribe to the position that, as they *promote absorption*, that they are therefore appropriate in all forms of this complaint. It is only in those cases in which there is observable an acceleration of pulse, not amounting to fever, that we deem them admissible. In a contrary condition of the arterial system, as when the disease supervenes upon old and worn out constitutions, as indicated by a feeble and frequent pulse, it is evident that an emetic cannot otherwise than depress a system, already requiring artificial support. It is not necessary that this excitement be manifested by the pulse. *Inordinate capillary arterial action and consequent serous effusion* may exist without involving the circulation in the larger system of vessels.

These opinions have been adopted, because we think that observation has taught us that the absorption and discharge of the fluid collected in the peritoneal cavity, is never effected until such time as the hydragogue medicines resorted to, have, by their evacuant operation, subdued that *excited* condition of the pulse, upon which the disease, in a majority of cases, essentially depends. By the profuse serous evacuations, and a consequent diminution of the circulating mass within the *exhalent arteries* of the intestines, a revulsion is produced, and the tide of the circulation is reversed. Instead of a preternatural afflux to the capillaries of the peritoneum, it now flows to the capillaries of the mucous membrane of the intestines, which in obedience to the stimulant operation of medicine, pour out their serous contents, thus substituting an artificial excitement of the capillaries of a mucous, for the more dangerous inflammatory condition of those of a serous membrane. Such, do we believe, is the *modus medendi* of ordinary hydragogues. To their evacuant or depleting powers, do we attribute the beneficial results consequent upon their exhibition.

If the above reasoning be correct, we feel confident that an antimonial cathartic would be decidedly preferable to all other cathartics, by virtue of its twofold operation upon the system. It promises to answer the double indication of producing revulsion of the circulation, by the profuse serous evacuations which are consequent to its exhibition, as also to controul the circulation within the peritoneal capillaries by virtue of its *sedative* action upon the *heart* and *arteries*, thus obviating that condition in this system of vessels, upon which we have supposed the serous deposit to depend. To this artificial inequilibrium of the circulation of the arterial and absorbent systems, brought about by the diminished action of the former, do we refer the *apparent direct* stimulant effects of the latter. Emetics do not

promote absorption, by directly stimulating this system of vessels, but rather accomplish the removal of effused fluid, by *arresting* its secretion—by controlling the circulation within the diseased capillaries of the parts affected.

An investigation into the pathology of dysentery, in the highest degree corroborates the use of emetics; all the symptoms declaring the existence of *intestinal inflammation*, and *consequent spasmodic constriction*. Of the various theories which have been promulgated as to the pathology of this disease, each may be made to countenance the above pathological exposition. Whatever theory, therefore, we may adopt, we can substantiate the utility and *modus medendi* of emetics. If with SYDENHAM, we believe it to be the result of checked cutaneous transpiration; if with CÆLIUS AURELIANUS, AKENSIDE, STOLL and RICHTER, we admit it to be a rheumatic affection of the digestive tube; if with CULLEN, we believe it to be a catarrh of the intestines; if we believe it to consist in spasm of the colon, the *colitis* of BALLINGATE, whichever of these opinions we adopt, the principal indications are, *to relieve spasmodic constriction, to determine to the surface, and to take off local inflammation by controlling the capillary circulation*. In accomplishing these indications, a knowledge of the *secondary operation* of emetics becomes of the highest importance. Of these various theories, we believe that which makes the disease to consist in *inflammation*, and *consequent spasm* of the intestinal tube, to be most in accordance with the truth. To obviate this morbid condition of the intestines, the relaxant properties of emetics promise much. Their *sedative action* upon the capillary system of vessels, controlling the circulation within the inflamed parts and the relaxation which must always be a concomitant of the abstraction of blood from the capillaries of the inflamed part, conspire to give them claims to the utmost confidence. Spasm must be considered, in a large majority of cases, as dependant upon an accumulation of nervous energy in a part. In whatever part an accumulation of the vital fluid occurs, a preternatural accumulation of the *vis nervæ* is the natural consequence. To take off this preternatural determination of the circulatory and nervous fluids, by creating an artificial *centre of irritation*, is the principal object in exhibiting an emetic in dysentery. With their *primary action*, viz. the ejection of contents of the stomach, we have little to do; their *modus medendi* is to be sought for in their *sedative action upon the capillary system of vessels* induced by the determination of the circulatory and nervous fluids to the emetic oppressed stomach.

From what has already been said, we feel that we may have been

anticipated in extending their use to all the remaining phlegmasiæ. In all inflammations of the serous membranes they exert a most remedial influence, by virtue of their sedative action upon the extreme vessels, and the more delicate the system of vessels, the greater power they appear to exert. Their highly remedial influence in ophthalmia and erysipelas, in which diseases the vessels of the most delicate tissues of the system are affected, viz. the conjunctiva and the skin, are corroborative of the assertion.

We are not ignorant that erysipelas has been thought by the eminent DESAULT to be dependant upon derangement of the biliary system, and its cure essentially connected with the copious evacuations of bile, incident to the exhibition of an emetic. We differ, in toto, from this justly celebrated authority. We should be inclined to refer the preternatural secretion and consequent vitiation of the hepatic secretion, to some morbid condition of the *capillary* vessels of the liver and general system, rather than view the vitiated secretion as the *cause* of the primary derangement, and it is to the peculiar action which emetics exert upon this system of minute vessels, that we are to look for the solution of their *modus medendi*. If the morbid action consists in spasm and inflammation of these vessels, then we should point to the use of emetics as the most efficient means of producing universal relaxation, and consequent diminution of arterial capillary action.

Enough has been said to induce the practitioner to extend the use of emetics to all the remaining phlegmasiæ. In enteritis, peritonitis, cynanche trachealis, cynanche laryngea, and cynanche maligna, the most formidable of all anginose diseases, the use of emetics are indispensable. In all inflammations affecting the denser membranes, they become the most powerful auxiliaries of the lancet, but it is principally in the latter disease that their remedial agency is most conspicuous. The rapidity with which the inflammation extends itself, and its proneness to pass into a state of mortification, imperiously demands that we resort to the use of emetics, whose action seems particularly directed against the inflammatory condition of the capillaries of the mucous membrane lining the throat, whose excessive action and consequent mortification constitutes the danger of this truly formidable disease.

That a prompt resort, and a repeated use of the lancet will accomplish most of the indications for which we have recommended the use of emetics, is a fact which would seem to invalidate the importance which we have endeavoured to attach to this class of medicines in treating the phlegmasia, if not otherwise explained. That the

lancet is a direct sedative to the capillary system of vessels, by emptying the larger vessels of their contents, and thus creating a determination to these, which is effected at the *expense* of the capillary system, is generally admitted; and it would appear that a repetition of its use would effect the very indication for which we prescribe our emetic, viz. to controul the circulation within the capillary system, which, if it does not constitute, certainly is favourable to the existence of inflammation. We do not wish for a moment to countenance the idea that we reject the use of the lancet. We rather resort to emetics as its most powerful auxiliary, and as instrumental in *protracting* that condition of the capillary circulation induced by the use of the lancet, without effecting an excessive expenditure of the vital fluid, which favours serous effusion, an evil which is also to be avoided. Though the lancet produces a change in the circulation, in which the tide sets from the seat of inflammation, viz. the extreme vessels to those of larger diameter, the system soon establishes an equilibrium, and the seat of irritation again becomes a point to which the circulation is attracted, until a repetition of its use again produces a revulsion. To avoid this excessive expenditure of the vital fluid, we prescribe emetics, which effectually controul without diminishing the quantity of the circulating mass, already so much reduced as to render its further abstraction liable to be attended with dangerous consequences.

With this exposition of our views of the pathology of dropsy, we pass on to say a few words to reconcile the great discrepancy which pervades the profession relative to the use of emetics in apoplexy. The weight of authority, we are well aware, is against their use, and the acknowledged pathology of the disease, which makes it to consist in a congested state of the cerebral vessels, would appear to give additional weight to the objecting party. A reference, however, to the phenomena which invariably obtain previous to the act of emesis, will in a great degree, invalidate the reasonings of those who oppose their use. The pale and shrivelled countenance, the frequent, feeble, and irregular pulse, the diminished capillary circulation, indicated by the paleness of the general surface, all tend to prove the fallacy of an assertion, based upon high authority, viz. that emetics "have a direct tendency to increase the fulness of these vessels, (cerebral,) by increasing the arterial and retarding the venous circulation." Now we rather think that it is susceptible of proof, that directly the reverse of this obtains. Previous to the act of vomiting, there always exists a diminished action in the vessels of these systems by which both the velocity and quantity of the circulating mass is materially

diminished in the cerebral vessels. To the *sedative* action of an emetic upon the heart and arteries and other circulatory organs, are we to look for the fact which can alone reconcile the discrepancy of opinion relative to the use of emetics in apoplexy. By virtue of the sympathy which exists between the stomach and heart, resulting in a diminished action of the latter, the afflux of blood to the head, is so much diminished as in a great measure to preclude the possibility of danger during the short period of emesis by preventing the free return of the circulatory mass through the venous channels. It is, then, by a reference to the sedative effects of emetics, previously to the act of vomiting, thereby controlling the cerebral circulation, that we think ourselves justified in recommending the exhibition of this class of medicines as legitimate resources of the art in treating apoplexy.

A few words upon the diaphoretic properties of antimonials we hope will not be deemed superfluous. In accomplishing this important indication, antimonials are singularly efficacious. By the universal relaxation which pervades the system when under nausea, relieving the morbidly constricted vessels of the surface, thus *eliciting* the natural cutaneous transpiration; by the moisture and even profuse perspiration which bedews the forehead, and even whole body, of the patient, when in the act of vomiting, whose natural secretions have just before been locked up by febrile action; by the softness and coolness of the skin consequent to these attempts at vomiting; by these and other considerations, we should be disposed to give antimonials a decided preference, as diaphoretics, over that class of stimulant medicines, which, by increasing the circulation, *extorts* perspiration from the constricted capillaries of the surface. In the exhibition of the former, the *spasm* of these vessels is first subdued by the relaxation incident to nausea, before the attempt at vomiting, by increasing the circulation, force out cutaneous transpiration, thus removing all those fears which might justly be entertained when prescribing those stimulant medicines which break up spasm, without previously relieving the morbidly tonic condition of the cutaneous capillary system.

As expectorants, the value of antimonial emetics are too generally acknowledged to require comment here, we shall, therefore, content ourselves with saying a few words upon their *modus medendi*.

Directly stimulant to the stomach, and thus concentrating nervous energy in this viscus, an emetic becomes indirectly a powerful sedative to the rest of the system. By the intervention of the diminished action of the heart, a corresponding change is produced in the capillaries, ramifying upon the mucous membrane of the bronchiæ and parenchyma of the lungs. A diminished action in these vessels is an ap-

lancet is a direct sedative to the capillary system of vessels, by emptying the larger vessels of their contents, and thus creating a determination to these, which is effected at the *expense* of the capillary system, is generally admitted; and it would appear that a repetition of its use would effect the very indication for which we prescribe our emetic, viz. to controul the circulation within the capillary system, which, if it does not constitute, certainly is favourable to the existence of inflammation. We do not wish for a moment to countenance the idea that we reject the use of the lancet. We rather resort to emetics as its most powerful auxiliary, and as instrumental in *protracting* that condition of the capillary circulation induced by the use of the lancet, without effecting an excessive expenditure of the vital fluid, which favours serous effusion, an evil which is also to be avoided. Though the lancet produces a change in the circulation, in which the tide sets from the seat of inflammation, viz. the extreme vessels to those of larger diameter, the system soon establishes an equilibrium, and the seat of irritation again becomes a point to which the circulation is attracted, until a repetition of its use again produces a revulsion. To avoid this excessive expenditure of the vital fluid, we prescribe emetics, which effectually controul without diminishing the quantity of the circulating mass, already so much reduced as to render its further abstraction liable to be attended with dangerous consequences.

With this exposition of our views of the pathology of dropsy, we pass on to say a few words to reconcile the great discrepancy which pervades the profession relative to the use of emetics in apoplexy. The weight of authority, we are well aware, is against their use, and the acknowledged pathology of the disease, which makes it to consist in a congested state of the cerebral vessels, would appear to give additional weight to the objecting party. A reference, however, to the phenomena which invariably obtain previous to the act of emesis, will in a great degree, invalidate the reasonings of those who oppose their use. The pale and shrivelled countenance, the frequent, feeble, and irregular pulse, the diminished capillary circulation, indicated by the paleness of the general surface, all tend to prove the fallacy of an assertion, based upon high authority, viz. that emetics "have a direct tendency to increase the fulness of these vessels, (cerebral,) by increasing the arterial and retarding the venous circulation." Now we rather think that it is susceptible of proof, that directly the reverse of this obtains. Previous to the act of vomiting, there always exists a diminished action in the vessels of these systems by which both the velocity and quantity of the circulating mass is materially

diminished in the cerebral vessels. To the *sedative* action of an emetic upon the heart and arteries and other circulatory organs, are we to look for the fact which can alone reconcile the discrepancy of opinion relative to the use of emetics in apoplexy. By virtue of the sympathy which exists between the stomach and heart, resulting in a diminished action of the latter, the afflux of blood to the head, is so much diminished as in a great measure to preclude the possibility of danger during the short period of emesis by preventing the free return of the circulatory mass through the venous channels. It is, then, by a reference to the sedative effects of emetics, previously to the act of vomiting, thereby controlling the cerebral circulation, that we think ourselves justified in recommending the exhibition of this class of medicines as legitimate resources of the art in treating apoplexy.

A few words upon the diaphoretic properties of antimonials we hope will not be deemed superfluous. In accomplishing this important indication, antimonials are singularly efficacious. By the universal relaxation which pervades the system when under nausea, relieving the morbidly constricted vessels of the surface, thus *eliciting* the natural cutaneous transpiration; by the moisture and even profuse perspiration which bedews the forehead, and even whole body, of the patient, when in the act of vomiting, whose natural secretions have just before been locked up by febrile action; by the softness and coolness of the skin consequent to these attempts at vomiting; by these and other considerations, we should be disposed to give antimonials a decided preference, as diaphoretics, over that class of stimulant medicines, which, by increasing the circulation, *extorts* perspiration from the constricted capillaries of the surface. In the exhibition of the former, the *spasm* of these vessels is first subdued by the relaxation incident to nausea, before the attempt at vomiting, by increasing the circulation, force out cutaneous transpiration, thus removing all those fears which might justly be entertained when prescribing those stimulant medicines which break up spasm, without previously relieving the morbidly tonic condition of the cutaneous capillary system.

As expectorants, the value of antimonial emetics are too generally acknowledged to require comment here, we shall, therefore, content ourselves with saying a few words upon their *modus medendi*.

Directly stimulant to the stomach, and thus concentrating nervous energy in this viscus, an emetic becomes indirectly a powerful sedative to the rest of the system. By the intervention of the diminished action of the heart, a corresponding change is produced in the capillaries, ramifying upon the mucous membrane of the bronchiæ and parenchyma of the lungs. A diminished action in these vessels is an ap-

proximation to their natural and healthy condition, and mucons secretion is the result in a system of vessels whose action before was suspended or performed in a limited manner, owing to capillary spasm. To this *indirect sedative* power of emetics must be attributed the protean action of this class of medicines. As sialagogues, by relaxing the salivary glands to that degree as to incapacitate them for the retention of their peculiar fluids. As emmenagogues, by relaxing the uterine capillaries, the morbidly tonic condition of which may frequently be regarded as the cause of the non-appearance of their peculiar secretion. As narcotics, by controlling inordinate arterial action, which favours the accumulation of nervous energy in important organs, and especially in the brain, upon which that distress and anxiety peculiar to intense febrile action is dependant. As the system has approximated the natural and healthy condition, by the equalizing action of an emetic, or rather by its power of determining nervous energy from the oppressed organ to the stomach, we have witnessed corresponding changes in the feelings of the patient, varying from mental and corporeal tranquillity to profound natural sleep.

It now only remains for us to say something upon the mode of administering emetics, by which the greatest advantages are to be gained; the ordinary manner of administering them being deficient in that principle of gentle, repeated, and protracted emesis, upon which success must chiefly depend. We believe that it will be in unison with the facts, when we assert that the usual mode of administering an emetic at the present day, is by exhibiting four or five grains, in portions of three-fourths of a grain to a grain, at intervals of from ten to fifteen minutes, until such time as the act of vomiting be induced, aiding and accelerating its operation by copious draughts of tepid water, or a weak infusion of chamomile flowers. By the solvent powers of the former, and the emetic qualities of the latter, every portion of the original emetic substance is ejected from the stomach; thus interrupting its cathartic operation, to induce which, it is necessary that a portion of the emetic should pass the pyloric orifice of the stomach, and be introduced into the alimentary canal. Nor is the loss of its cathartic operation the only objection which can be urged against this mode of administering emetics. Administered as above, their effects are too *evanescent* to derive the advantages which ought to result from a more judicious administration of them; the system not being under their effects longer than from three-fourths of an hour to an hour and a half. Even when resorted to for this short period, no one has failed to observe their remedial effects; a softer pulse, the reëstablishment of the cutaneous transpiration, and a more



tranquil condition of the patient, are the usual results of their administration. But, as we observed, when thus administered, the beneficial effects are evanescent, the speedy withdrawal of the emetic, producing these changes, necessarily favours the reëstablishment of febrile action. We know of no therapeutic principle more allied to truth, than that upon which we have always practiced in diseases of associated action, viz. that it is by *repeated impressions* upon the circulatory system through the intervention of the *gastro-cardiac* sympathy, that we must hope to break through the chain of morbid associations, constituting febrile diseases.

Gutta cavat lapidem, non vi, sed sæpe cadendo.

It is by a steady perseverance in the use of emetics given in minute doses of half a grain at intervals of half an hour, that the system will be kept so long under their sedative effects, as must effectually to trammel the disease, and thus offer an obstacle to its further progress by association. By the use of emetics, the system is brought into a condition directly opposite to that of febrile action; and it is only by protracting this state of things, viz. by keeping up *continued* but *moderate pressure* upon the *arterial system* by the sedative effects of an emetic, that we can dissolve the chain of morbid actions. An attentive observation of the phenomena which develop themselves, while the system is under the effect of an emetic, will convince us of the necessity of protracting the emetic action. In the exhibition, no very sensible effects are produced by the first three or four half grains. A well-directed observation would, however, detect certain changes which would escape the eye of one not fully skilled in the exhibition of emetics. The pulse assumes a softer and more frequent action, there is less cerebral excitability, and general corporeal composure; nausea now supervenes, and with it universal relaxation, succeeded by attempts at vomiting, which accomplished, a universal relaxation pervades the cutaneous capillaries, and a corresponding quantity of perspirable fluid is the result. This approximation to the healthy standard is of short duration; as the effects of the emetic pass off, febrile action again reëstablishes itself, until the lapse of the half hour brings with it another half grain, which never fails to produce even greater relief, each interval of febrile action being of greater duration, until the disease thus checked from time to time, by the obstacles which it encounters in the *sedative action* of the emetic, is so trammelled in its progress, as eventually to be forced to yield. When we contrast this practice with that which now obtains, we think its advantages must be apparent to the most casual observation. In protracting the emetic action by the exhibition of minute doses at

proper intervals, we interpose our second dose just at a time when all the advantages derived from the emetic substances are about to wear off, and febrile action again begins to establish itself; at this critical moment we place our *veto* upon its further progress by a repetition of the dose. In the ordinary mode of administering emetics, all the advantages gained by their exhibition are lost by a discontinuance of them. Though the disease be partially subdued in the absence of the emetic, it gains sufficient strength again to become formidable. Though a victory is gained, all the advantages which might result from a pursuit and total rout of the enemy are slothfully abandoned.

To some of the profession, the practice of protracting the emetic action may be fraught with many and great evils, as tending to induce an irritable condition of the stomach, not a little to be dreaded. Such fears may be calmed by the fact, that when administered in the above small doses, we have never known them to have such an effect. This will be the more easily credible, when we assert that it is never necessary to administer more than from four to six grains before the *criterion* which induces its discontinuance supervenes. One or two copious alvine evacuations have always been our signal for its discontinuance. Such then are the additional views based upon the *secondary action of emetics* which we proposed to give, and upon which has been based a practice singularly successful in diseases of associated action.

*New York, August, 1831.*

ART. X. *Report of the Committee of the Board of Health of Charleston, respecting the Prevalence of Varioloid and Small-pox in that city during the year 1829.*

THE Committee of the Board of Health, appointed to report upon the prevalence of varioloid and small-pox during the last year, and for other purposes, respectfully *Report*,

That, to accomplish the duties assigned them satisfactorily, they sent the following Circular to the Physicians of Charleston:—

DEAR SIR,

*Charleston, Nov. 25th, 1830.*

Having been appointed a Committee of the Board of Health, to ascertain how far the varioloid and small-pox have prevailed, &c. &c. we respectfully, (in order to accomplish satisfactorily the intentions of the Board,) present for